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THE SANITARIAN.

A MONTHLY JOURNAL.

A. N. BELL, M.D., Editor.

CONTENTS

I. THE ADIRONDACK WILDERNESS. *With Map.* - - - - - - 241
II. WOODMAN SPARE THAT TREE, - - - - *George P. Morris.* 253
III. ARTIFICIAL FEEDING OF CHILDREN, - - - *Jerome Walker, M.D.* 254
IV. FASHION. *Illustrated,* - - - - - - - - - - 259
V. RESISTANCE TO CHOLERA, - - - - - - *John Simon* 263
VI. ON SEA-BATHING, - - - - *Abbott S Smith, M.D , F.R.C.P.* 268
VII. THE SOUTH WESTERN CHOLERA OF 1873, - - *J. C. Peters, M.D.* 277
VIII. EDITOR'S TABLE:—*Prof. Henry Hartshorn, prediction in regard to Cholera; Massena Springs; Sanitary Work—Capt. P. J. J. Giles, of London; Defective Drainage; American Public Health Association; Epidemiological Society of Maryland; The Christian at Work—Rev. T. De Witt Talmage; Ourselves,* - 283
IX. THE PUBLIC HEALTH:—*New York, Brooklyn, Chicago, Indianapolis, Dayton, Wheeling,* - - - - - - - - - - - 286
X. BOOKS RECEIVED, - - - - - - - - - - - - 288

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THE SANITARIAN.

A MONTHLY JOURNAL.

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THE ADIRONDACK WILDERNESS.—THE GREAT FOREST PARK OF THE STATE OF NEW YORK, IN A SANITARY POINT OF VIEW.

In compliance with an Act of the last Legislature of the State of New York, a Commission was appointed, consisting of Ex-Governor Horatio Seymour, Patrick H. Hagan, William B. Taylor, George Raynor, William A. Wheeler, Verplanck Colvin, and Franklin B. Hough, to examine and report upon the advisability of reserving and improving the Adirondack Wilderness as a State Park.

It is, perhaps, owing to the rapid strides this country has made in area, as well as in population, that the Adirondack Wilderness has hitherto escaped the woodman's axe; and, indeed, remained to an extraordinary degree a *terra incognita*. A region in the very midst of one of the old thirteen colonies, surrounded by the highest degree of enterprise known to the nation, and circumvented, as it were, by the great *new* scenery of the West.

"Since the completion of the primary geological survey of New York there has not been even an attempt at an exploration of the whole of the vast forest now known as the Adirondack Wilderness.

"For almost all the exact knowledge that we possess of the topography and physical character of the region, we are indebted to Prof. Emmons and those who so ably assisted him.

Through them we first learned that Whitefaee Mountain, beforetime plaeed at about two and a half thousand feet above the sea, and, consequently, supposed to be far inferior in altitude to the Catskills, really overtopped, by more than a thousand feet, those more famous and familiar mountains, while, southward, towering amidst the elouds, arose a sea of summits grander and still more magnifieent.

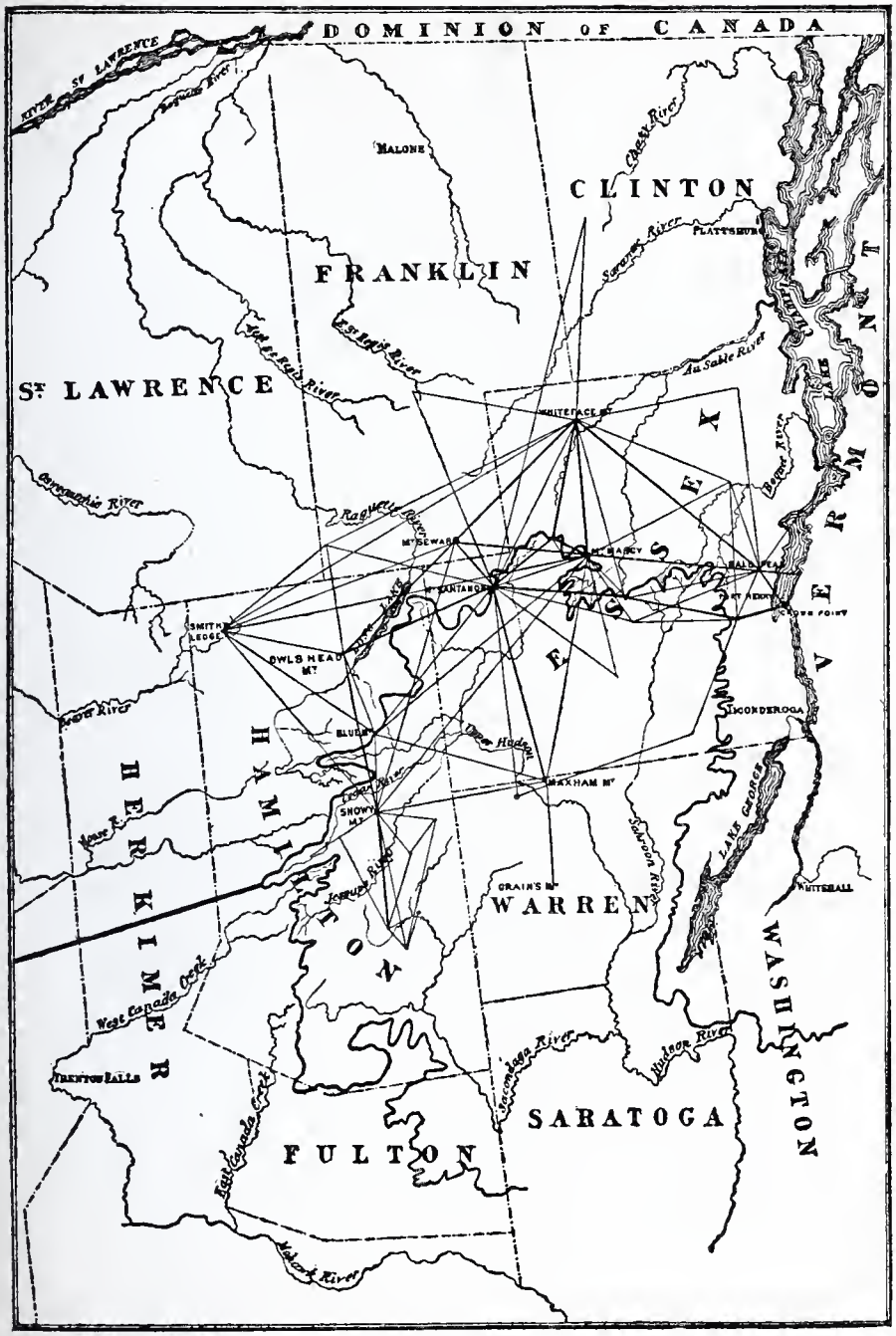
"There, guarded by the mountain peaks and ridges, arose Mt. Marey, whieh, by barometer, they found to be 5,467 feet above the sea; and there, hidden, lay Lakes Colden and Avalanehe, long thought to be the highest bodies of water eastward of the Rocky Mountains.

"This was almost the first scientifie exploration of the mountains; for though the Indian and white hunters had long traversed the region, and had, even for the unvisited summits, names whieh many of them still retain—despite subsequent re-naming—the only reeorded measurements of the mountains, on whieh is plaeed relianee, are those of Profs. Redfield, Emmons and Benediet, during the progress of the geologieal survey. These altitudes were all taken with mountain barometer, the last reported measurements being made in 1839, and reeorded in the report, Assembly Doeument No. 50, for the year 1840.

"Sinee that period maps of the wilderness region have appeared, generally compiled from the notes of tourists and the statements of hunters or guides; in whieh the publisher has often so mistaken his informant as to plaee some mountains in the wrong towns or eountries, or (as in one instanee) to make spaee for three large and magnifieent lakes, where, in reality, but two exist; while a thousand of the most prominent features of the wilderness, eloud-eapped mountains, broad-stretehing ponds and rushing streams, are totally omitted.

"The vastness and wildness of the region are the better appreeiated when, at this late day, we are able to find within it mountains from 3,000 to 4,000 feet in height, nameless, unaseended and unmeasured. The ineorreetness of the existing maps is understood, when we diseover that the famous Blue Mountain or Mount Emmons is not 4,000 feet high (as represented), and that it is apparently inferior to the lofty neighboring summit known as Snowy Mountain, which rises to an altitude of 3,859 feet, where on the maps is shown a blank.

"Again, while geographers have expatiated upon the great elevation (for this region) of the lakes Colden and Avalanehe,



NOTE.—Divide between St. Lawrence, Hudson, and Mohawk Waters ———
Water shed of the Upper Hudson is shown by the crooked lines branching from the primary divide.

in Essex county, a little more than 2,700 feet above the sea, they have gone blindly on, unaware that far in the south portion of the woods, the Cedar lakes—from whose shores the snows of winter depart slowly—lie, on the great and most elevated plateau of the wilderness, at an elevation of 2,493 feet; not flowing to the St. Lawrence, as represented upon their maps, but to the Hudson river.

"As a matter of technical geographical interest, the discovery of the true highest pond-source of the Hudson river is, perhaps, more interesting. Far above the chilly waters of Lake Avalanche, at an elevation of 4,293 feet, is *Summit Water*, a minute, unpretending tear of the clouds, as it were—a lonely pool, shivering in the breezes of the mountains, and sending its limpid surplus through Feldspar brook to the Opalescent river, the well-spring of the Hudson.

"Many mountains still remain barometrically unmeasured, though their altitude may be trigonometrically computed. Mt. Dix and Mt. McIntyre, though they have been previously ascended, are among the number unmeasured. The appropriateness of the new names Mt. Redfield, Mt. Street, and Mt. Adams, given to summits hitherto unnamed, will be appreciated by those acquainted with the written history of the region.

"It is now a question of political importance whether the section covered by this survey should not be preserved, in its present primitive condition, as a forest-farm and source of timber supply for our buildings and our ships. The deprivation of a State of its timber is a grave error in political economy, and at this time when the Western States of the Union, feeling their deficiency, are laboriously planting forests, it behooves us to see to the preservation of those with which we are spontaneously blessed."*

By a glance at the influence of forests generally, we shall be the better able to appreciate the importance of the Adirondack Wilderness of New York to its surroundings; and the better able also to comprehend the influence of forests on the healthfulness of a country.

"It has been observed," Becquerel remarks, "that humid air charged with miasmata, is deprived of them in passing

* Report on a Topographical Survey of the Adirondack Wilderness of New York. By Verplanck Colvin. Senate Doc. 53, 1873.

through the forest."* And the common belief that intervening trees often afford protection against malarious marshes is founded on observations sufficiently well verified to be accepted as a general fact. But the influence of forests generally, in preventing the diffusion of malaria, is a matter of much less familiar observation.

Some forests, the great Dismal Swamps of Virginia and the Carolinas, for example, in a climate not very different from the malarious region of Italy, are known to be healthy in the interior, even to the white man ; while on their borders, or in other portions where trees are felled, they are exceedingly insalubrious. The same conditions seem to apply to the Mexican Gulf region, and to the west coast of Africa. On the borders of the forests of these regions, or wherever they are interspersed with sandy plains, or sparse from other causes, fevers prevail, while in the dense regions fevers are ordinarily absent.

The exceptions to these conditions are usually found to depend upon soil saturation. And such localities are usually unhealthy under all circumstances.

The general effect of forests is to equalize and assimilate the temperature of the earth's surface. The winter state of the ground in the North is tempered and congenialized by the forests under softer skies ; and the arid plains of the tropics are made tolerable to man, only by the jungles which resist him. In cold climates, it is necessary that we should compare the condition and properties of the soil thus covered, with that which is cleared and cultivated, and examine these different conditions at different seasons of the year. The disparity will be found to be greatest where it is coldest, as in the northern portion of the United States and Canada, and in the north of Europe. In that portion of these climates covered by forests, the first autumnal snows usually fall before the ground is frozen, or, at most, when the frost has penetrated to the depth of a few inches only. The snow being protected, for the most part, from the sun's rays and from

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* Becquerel, *Des Climats*, etc.

the winds which sweep bleak regions, accumulates by every succeeding recurrence.

But snow is not impervious to the sun's rays, and for this reason, the first snow fall, that which is in immediate contact with the frozen crust of the earth—if one has already been formed—is soon thawed ; and the earth's surface is subsequently kept below the freezing point throughout the winter. Hence the bottom layer soon begins to melt, and proceeds more or less rapidly, according to the relative temperature of the air and the earth's surface ; and the resulting water is gradually absorbed and carried off by infiltration, with such facility that both the snow and the layer of leaves lying between it and the ground often appear to be quite dry, notwithstanding the under surface of the leaves, and the accumulated vegetable mould, are in a state of continuous moisture.

Doubtless a small portion of the snow returns to the atmosphere by the process of evaporation, and some runs off into superficial watercourses. But, owing to the protection afforded by the shade from the rays of the sun, and the entanglement of the icy surface pierced by the trees and undergrowth, the great body of the snow deposited in forest regions is retained until it there melts.

The snow water slowly imbibed by the earth, besides promoting the growth of the overshadowing trees, gradually sinks, according to the greater or less permeability of the soil or saturated stratum, and proceeds to seek out or to form unseen conduits, which wind their way along into channels and springs ; or, oozing out at the hill sides, there forms rills, which, anon, swell into streams and rivers, and descends to the sea, whence it came.

The roots of forest trees, in all climates, usually imbed themselves in the moist soil, sufficiently deep to be in a temperature of about the annual mean. In the most important regions of both America and Europe, and especially in those portions which have suffered most from the destruction of the forests, the superficial strata of the earth are colder in winter, and warmer in summer, than the strata a few inches lower.

This shifting temperature of different strata below the surface of the earth, approximates to the atmospheric mean of the respective seasons. And the trees, being conductors of heat, when the earth is colder than the air, convey the heat of the atmosphere *to* the earth ; and when the temperature of the earth is higher than that of the air, they transmit the heat in the opposite direction *from* the earth. It follows then, that, as conductors of heat, the forests play an important part towards the equalization of the temperature of the earth and the atmosphere. But, besides this, in temperate latitudes, especially, the effect of trees on temperature is considerably increased by the nature of the foliage. Most, if not a majority of the trees, are of deciduous foliage, and their radiating, as well as their shading surface, is very much greater in summer than in winter. In the summer season they impose a complete canopy between the ground and the sky; and in forests the branches frequently interlock, covering miles of surface. Some years ago, an estimate was made of the expanse of foliage of a single tree. "The Washington Elm, at Cambridge, Mass.," a tree of no extraordinary size, "was estimated to produce a crop of *seven millions* of leaves, exposing a surface of two hundred thousand square feet, or about five acres of foliage."*

From this increase in the amount of radiating and absorbing surface supplied by trees, we gain some appreciation of their thermoscopic effect in mitigating high temperature by this means.

We might also, if space permitted, consider in detail the *Electrical* effect of forests in the prevention of hail-storms and water-spouts ; their *Chemical* influence in the absorption of carbon ; their everywhere recognized *Mechanical* effects in sheltering leeward regions from cold and storms, impeding the passage of air currents over the ground, which is well known to be one of the most efficient agents in promoting evaporation and refrigeration. In the forest, the air moves almost imperceptibly, and moves only as local changes of temperature

* First Lessons in Botany and Vegetable Physiology.—GRAY.

affect the specific gravity of its particles. Hence there is often a dead calm in the forest when a furious wind is raging in the open country not far off. Their *hygrometric* influence, in part mechanical, as interposing obstacles to the dew and light showers, and redispersing the water from these sources into vapor, to cool the air; and also, in heavy rains, serving to break the big drops, and to lessen the force with which they would otherwise strike and wash away the surface of the earth. Their power of *Absorption and Exhalation*; when we consider the amount of water daily absorbed by a thrifty tree, and how small a proportion of this fluid consists of matter which enters into new combinations and becomes a part of its solid frame work, it is evident that the superfluous water is somehow carried off almost as rapidly as it is absorbed. This exhalation, by whatever process effected, absorbs atmospheric heat and produces refrigeration.

And we might also proceed to illustrate the benefit of forests on the *flow of springs;* the *prevention of inundations, torrents*, and *land slides;* the utility of the *annual leaf moulting*, not only in reference to the maintenance of an equable temperature at the earth's surface, but in the preservation of small forest plants and seeds, comprehended for the most part in the able report of the Commission, of which the following is an abstract:

"After a careful consideration of the projected Forest Park, we are of opinion that the protection of the forest from destruction is absolutely and immediately required.

"We do not favor the creation of an extensive and exclusive park for mere purposes of recreation, but, condemning such suggestions, recommend the simple preservation of the timber as a measure of political economy.

"The conclusion that the permanent preservation of a large portion of this forest is necessary, is based upon numerous considerations intimately connected with the great business interests of the State.

"The land slopes upwards towards the wilderness, whose marked peculiarity is the multitude of its lakes, of greater or

less degree, and the vein-like ramifications of its crystal brooks and rivers. The surfaces of the principal lakes throughout this upland are generally elevated from fifteen to sixteen hundred feet above the sea, whence some writers have been erroneously led to term the whole region a plateau of land. Viewed from some lofty peak, it is seen as a silent expanse of mountains, shrouded in unbroken woods, vast and quiet, and stretching to the apparent limits of the sky. Throughout this forest, game is still abundant; the deer, bear and panther, with smaller animals, find shelter and support, and their presence gives to the magnificent scenery a strange, wild and romantic element, which has contributed to make its more accessible portions a choice Summer pleasure ground for those of our people who travel, and who admire the natural splendors of their native land.

"Many of the inhabitants are forced to eke out their subsistence by hunting and trapping; and latterly, since the value of the region as a Summer resort has begun to be understood by our citizens, and the citizens of other States, the class of guides—hardy and intelligent men—has increased, and thousands of dollars, which have hitherto been expended in foreign travel, remain in, or are brought into, our State. The mineral wealth of the region is not inferior to that of its forests. It is practically limited to iron, which exists in remarkable purity and enormous quantities. Great activity in iron manufacture is now exhibited near Lake Champlain, at Port Henry, Mineville, Elizabethtown, Black Brook, and Dannemora. There are also superior grades of granite, valuable for building purposes.

"In the early days of iron manufacture in this region all the iron was made with the aid of wood charcoal. The 'charcoal' iron produced was unsurpassed in quality, and commanded a high price. *The result was that large sections in Essex County were entirely stripped of forests in order to supply the requisite charcoal. The mountains thus debosqued are to-day almost treeless, showing desolate flanks of naked rock; and some of the streams which once were trout brooks*

are now torrent beds, through which the water of each storm on the smooth sides of the mountains rushes swiftly off, to leave them almost dry, instead of slowly percolating through a sponge of moss and tree roots, as a slow-running, cold and constant spring.

"About one thousand and three square miles are upon the Hudson River side of the mountain divide which separates the headwaters of that river from the streams flowing to the St. Lawrence. This would be the approximate area of the region which would be required for the purposes of the forest park in case it should be determined that the preservation of the forests covering and protecting the sources of the Hudson is all that is necessary for that purpose.

"The State of New York is, perhaps, the most remarkable watershed of the eastern half of North America. Northwardly its waters descending to the St. Lawrence wash the coast of Labrador, while, far at the south, waters which reached the earth from the self same shower amid the Adirondack highlands pour through the Hudson valley to the sea; and in the western portion of the State, the sources of the Allegany river rush, foaming, from their mountain springs to the Ohio, flowing thence through the Mississippi to the Gulf of Mexico. It is northwardly that nearly every stream of this State, if traced to its source, will be found to originate in some lake or pond, of greater or less degree, from which, if in a forest region, it pours in an unfailing stream. South of New York there is no lake region till the brackish, dead water lagoons of Florida are reached; and it is to this system of lakes, of natural reservoirs, bosomed in the cool, primeval forests, that our State is indebted for that water supply which has supplied our canals, and that steady water power which is the wealth of so many manufactories. Without a steady, constant supply of water from these streams of the wilderness our canals would be dry, and a great portion of the grain and other produce of the western part of the State would be unable to find a cheap transportation to the markets of the Hudson River valley. In Erie and the neighboring western

counties grain would decrease in value, and the farmers would be in the power of the great railroad monopolies. The merchants of Albany would also suffer; their Summer trade would be ruined, and the hundred propellers which now make the Hudson foam before the fleets they tow might be idly tied to the wharves and left there to decay. We believe that the great Adirondack forest has a powerful influence upon the general climatology of the State; upon the rainfalls, wind and temperature, moderating storms and equalizing throughout the year the amount of moisture carried by the atmosphere; controlling, and in a measure subduing, the powerful northerly winds, modifying their coldness and equalizing the temperature of the whole State.

"All floods, however, are not to be attributed to the destruction of the forests; for in this as in other things there are exceptions to the rule. Nevertheless, upon the Hudson River the destruction of the Adirondack forest would have a calamitous effect. The deep Winter's snows, accumulating upon the disafforested uplands, would remain unmelted till the 1,300 square miles of the present wilderness watershed might have a compact covering of snow equivalent to twelve inches of water. Spring, with its sunshine and showers, would suddenly release this latent ocean; 36,241,920,000 heavy cubic feet of water might rush at once down through the valleys to the sea. More than a quarter of a cubic mile of water, hurried furiously into the narrow valley of the Hudson, would sweep before it fields of ice, to crush and sink the strongest vessels, and ruin the warehouses on our wharves. While the Adirondack forests remain, these deep snows will be protected from the direct rays of the sun in Spring, and will slowly and gradually melt away. The general temperature of the region will consequently be low; the air will not be overcharged with moisture, and sudden heavy rains will be improbable. Such vapor as exists will form light drifting clouds, which, influenced by the forests, will act the part of one vast shielding canopy above the snow-bound earth.

"In addition to these weighty considerations of political

economy, there are social and moral reasons which render the preservation of the forest advisable.

"Its effect upon the general healthfulness of the State is great. The philosopher Boyle long since remarked that in the Dutch East Indian Island of Ternate, long celebrated for its beauty and healthfulness, the clove trees grew in such plenty as to render their product almost valueless. To raise the price of the commodity, most of the spice forest was destroyed. Immediately the island, previously cool, healthy and pleasant, became hot, dry and sickly, and unfit for human residence.

"It is well known that the general clearing away of forests in this country has had a tendency to raise the temperature, which in summer reaches such a height as to be barely endurable. In our cities, these great heats, acting upon garbage in those miserable quarters which are but cesspools and sinks, give rise to the probable source of cholera and other epidemics, and the foul miasmatic effluvia which could not exist in the presence of living vegetation. 'Anxious to escape, our citizens hasten either to the country, the sea shore, or the mountains, while those whose avocations will not permit their absence, find a purer air in the semi-rural suburbs, or in those elegant parks which modern culture and civilization have come to consider indispensable in any city.

"A summer residence in this wilderness has been found so favorable to health and has become so popular, that people come even from St. Louis and Chicago, and more distant points South and West, and remain throughout the season. The mass of travel, however, comes from Philadelphia, Boston, and New York city. Should these wild lands become the property of the State, it is thought that leases of woodland points in lakes, and of islands near certain favorite localities, would form a very considerable source of income, and more than repay any expenditures which would be necessary. The forest is in itself a natural park, and it would be improper to think of enclosing it, for it should be a common unto the people of the State."

WOODMAN, SPARE THAT TREE.

WOODMAN, spare that tree!
Touch not a single bough!
In youth it sha'led me,
And I'll protect it now.
'Twas my forefather's hand
That placed it near his cot;
There, Woodman, let it stand,
Thy axe shall harm it not.

That old familiar tree,
Whose glory and renown
Are spread o'er land and sea,
And wouldst thou hew it down?
Woodman, forbear thy stroke!
Cut not its earth-bound ties;
O, spare that aged oak,
Now towering to the skies!

When but an idle boy
I sought its grateful shade;
In all their gushing joy
Here, too, my sisters played.
My mother kissed me here;
My father pressed my hand—
Forgive this foolish tear,
But let that old oak stand!

My heartstrings round thee cling!
Close as thy bark, old friend!
Here shall the wild bird sing,
And still thy branches bend,
Old tree! the storm still brave!
And, Woodman, leave the spot;
While I've a hand to save,
Thy axe shall hurt it not.

GEORGE P. MORRIS.

PRACTICAL POINTS IN THE MEDICAL CARE AND NURSING OF CHILDREN.

IV. ARTIFICIAL FEEDING—Continued.

BY JEROME WALKER, M.D.,

Physician to the Sheltering Arms Nursery, Brooklyn.

"PURE milk, of good quality, should possess the following characteristics :—

"It should be free from colostrum, or animalculæ, as shown by the microscope. It should have a neutral or slightly alkaline reaction to test paper. The specific gravity should not vary greatly from 1.029, though this is of minor importance if the cream is abundant. The cream should not fall below 9 per cent. And it should give on analysis about the following percentage composition :

Water	87.50	
Fat	3.25	
Casein	4.25	Curd, 7.50.
Sugar	4.50	
Ash	.75	

"The ash should not exceed the amount given by more than one-fourth of one per cent., nor the other ingredients fall more than one-half of one per cent. below the amounts opposite to each. And the total amount of solids should not be less than 12 per cent."

In pointing out *how* cows' milk should be used, we must consider this artificial nursing, as Cazeau calls it, as to its being used—

1st, In the *city* in the summer.

2d, In the *country* in the summer.

3d, In the city or country in the winter.

"In the warm months," writes Dr. Smith, "city infants

are very liable to derangements and fatal disorders of the digestive organs. There is much less danger from this source in cold weather, and in the country. I am fully convinced, that the nursling which, under other circumstances, should be gradually weaned at about the age of one year, should never, if in the city, be taken from the breast in summer, or in late spring, for, if the change of diet is made at this time, it will almost inevitably suffer from enterocolitis in the summer. If the mother finds herself pregnant, or her health or milk fail, it is better that a wet-nurse be employed, or the baby be taken into the country and weaned there, rather than commence with artificial feeding during the hot weather, when the diarrhœal maladies are so prevalent." Cazeau says: "In the country the chances are far more in favor of artificial nursing, besides, it being possible to be almost certain as to the health of the animal, the food it takes, and the good qualities of the milk—the excellent atmospheric conditions in which the child is placed, compensate, to a certain extent, for the imperfection of this mode of alimentation." Milk, warm—fresh from the cow, and slightly sweetened—I have noticed, agrees well with even very young children, who before, perhaps, have had to use diluted milk in the city. Dr. Reynolds corroborates this, in his note, saying: "In summer digestive troubles, with infants artificially fed, if I can get the milk not only fresh, but *warm*, just *immediately* from the cow, I add no water, and it agrees. Milk as milk begins to change to *die*, as soon as it begins to cool, nearly as soon as it leaves the breast." I believe no one advocates giving pure milk, *artificially* warmed, to a very young child.

Some writers insist that an infant should have only *one cow's milk*, and this is thoroughly believed in by many people. Those who know how this *one* cow's milk branch of the business is really carried on by the majority of milkmen in *the cities*, must be incredulous. Supposing that it *is possible* to obtain it, is it well to insist on its use alone?

According to Struckman (*Lancet*, 1856), Lehman, Pelezot, and Reiset, the milk of one cow varies in the quantity and quality of its constituents, in the different seasons of the year,

and even in a day, or a part of it. Apparently slight causes may make it unfit for a child. Dr. Dunster, in speaking of condensed milk, says: "Condensed milk is better in New York city than cow's milk, and vastly more reliable in every respect. It is more nearly of a constant quality, even than the milk from *one cow* alone, because it is an average from the milk of a hundred or more cows, and the daily irregularities have a natural tendency to balance one another. I have had the most satisfactory experience from its use, and never hesitate to recommend it in practice. Here in the Institution we keep a herd of cows, the milk of which is all mixed together, and the quality therefore quite even. I think, however, I would quite as soon rely upon condensed milk, notwithstanding all the advantages we have from the supervision and feeding of our cows." Dr. J. Lewis Smith, on the contrary, says: "I do not consider cow's milk, when condensed by evaporation of a part of its water, any better for infants than milk *not* subjected to this process." Though this statement of Dr. Smith's is rather *negative*, as he does not say whether he thinks it *as good*, yet we may infer that he does not advise or use it. These two opinions fairly express the belief and practice of physicians in general, viz., that the questions of equality, superiority, or inferiority, of condensed milk, as compared with simple cow's milk, are *open ones*. There are no statistics on the subject.

Dilution.—As to the dilution of milk, we might say with Dr. Reynolds, that it depends upon the strength of the milk; but it almost impossible to ascertain the strength, except by the results on each individual child. A variety of advice is given in text-books, essays, &c., and the result is, we find scarcely two medical men who agree in this matter. West says the degree of dilution must vary, according to the infant's *age*, and advises that at first $\frac{1}{2}$ water be added, and as the child grows older the proportion be reduced to $\frac{1}{3}$. Eustace Smith advises for 1st 6 weeks, $\frac{1}{2}$ dilution; after 6 weeks, and before 3 months, $\frac{1}{3}$. After 3 months, $\frac{1}{4}$; and finally about 4 or 5 months, milk may be given pure. Meigs and Pepper speak merely of 1st month, $\frac{2}{3}$ water. Condie suggests dilution with

water, but says nothing as to quantity. Eberle, at first, $\frac{1}{3}$ warm water; Churchill, at first, $\frac{1}{2}$ water. Dr. Cummings, of Massachusetts (*Am. Jour. of Med. Sciences*, Apr., 1858), urges, as a substitute for maternal milk, to take upper 3d of 3 quarts cow's milk, or lower half (last milked has most butter), dilute with $1\frac{1}{2}$ parts water, and sweeten." Cazeau says: Cow's milk for a new born child requires to be diluted with pure water, barley water, a decoction of crumbs of bread, rice slightly sweetened. Pure water he prefers in most cases, and the proportions must vary with the age and digestive powers of the child. During the 1st 3 weeks, $\frac{2}{3}$ water. In the early months, $\frac{1}{2}$. After which, unless the digestion is feeble, $\frac{1}{4}$ till 6 months, when the milk may be given pure. Dr. Dunster writes: "The error is on the side of too much dilution. By 6 or 8 months a child will usually, not always, digest pure milk, and beginning at birth, with from $\frac{1}{3}$ to $\frac{1}{2}$ of water, I run up this scale. But reliance on a rule is dangerous, and by examining excreta, and vomited material (ejecta), you can almost always form an opinion as to the proper quality of the milk, and be governed accordingly." This reliance upon the results of the use of each specimen of milk on each individual child, in preference to the apparent strength of the milk, or according to infant's age, seems to me to be the guide, but acknowledge this, and instantly the whole matter is left to the judgment of some careless physicians. To all who may wish a ready guide, the table of Eustace Smith is recommended, *milk alkalanized*, but he advises that the dilution should be made alkaline, by the use of carbonate of potash, in proportion of 1 gr. to each ounce of water, or with lime water. He prefers lime water, which contains $\frac{1}{2}$ gr. of lime to each fluid ounce, as the means of removing the firm clot caused by the coagulation of the caseine of cow's milk, the common difficulty of digesting this being an objection to cow's milk. Vogel uses carbonate of soda, 2 grs. to 1 ounce of water. Meigs and Pepper suggest lime water only, when necessary.

"It is desirable," says West, "that the milk should be daily tested, and that any acidity should be neutralized by the addition of lime water, or prepared chalk, just sufficient to impart to it a slightly alkaline reaction." A word of

caution here as to the amount of sugar to be added. Sugar is not always easily digested, and especially in weakly children, according to Desormeaux. I have myself seen this, and also that in some cases indigestion is relieved by a little more sugar than the child had been accustomed to.

The rule of Eustace Smith may be followed safely, departing from it, if *necessary*. For 1st 6 weeks, 1 teaspoonful of milk sugar, or pounded lump sugar, to 6 ounces of milk and lime water; after that gradually diminish the amount. If the lime water causes constipation, or it is believed that the child needs richer milk, Sir William Jenner's recommendation may be followed—2 teaspoonfuls of cream to $\frac{1}{2}$ pint of the milk and lime water; or if merely constipated, that of Chavasse, viz., common brown sugar. The recent suggestion of Dr. Channing (*Boston Jour. of Chem.*, May, 1873), as to the substitution of 4 to 6 fl. drachms of glycerine for the amount of sugar generally used in one day, with the milk, cream and water given as food, seems a reasonable one. It gives the required sweetness, and prevents fermentation.

Temperature.—We cannot ignore the temperature of the milk. Eustace Smith advises a temperature of about 95° F.; Bouchut, 59° in summer, and 68° in winter; West, from 90° to 95° F.; and in all cases where care is needed, a thermometer should be employed. We may place the temperature in summer as not less than 59°, and not at any time to be over 95° F. All writers, except Dr. Gumpracht, of Hamburgh, mention that the milk should *not* be boiled and heated, but warmed by placing the bottle of milk in water of the required temperature.

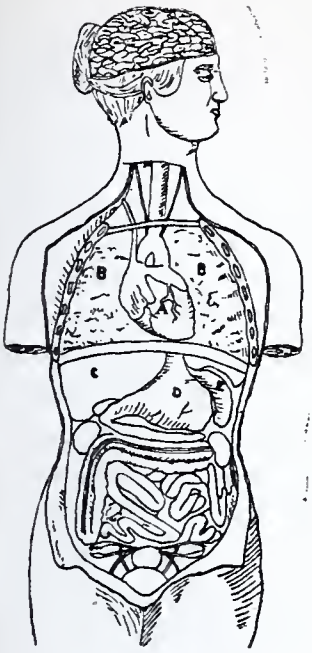
Dr. G. says: "To make cow's milk like human, boil, skim, add sugar of milk and salt." He has, after having tried water and sugar of milk, and found them imperfect, added salt to cow's milk, and found it more easy of digestion. Dr. Jacobi advises salt, and my own experience fully satisfies me of the value of it. All of the additions to cow's milk—water, lime water, carbonate of soda, salt, prepared chalk, or farinaceous food—are given to assist in making it more digestible, by breaking up the heavy clots of casein, and to prevent fermentation.

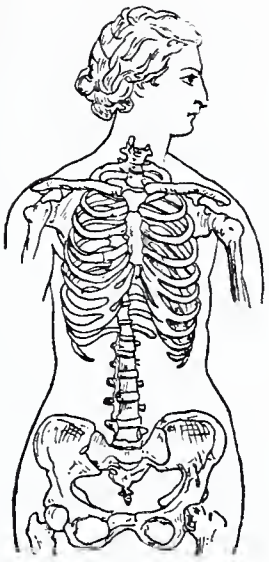
FASHION.

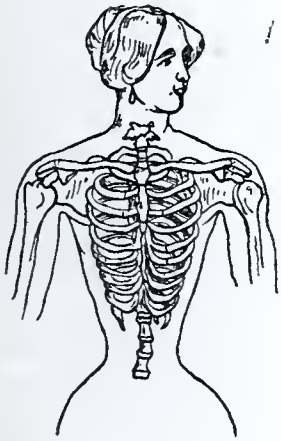
It is related by the distinguished medical author Thomas King Chambers, that on one wet winter's day at Florence, some years ago, he had been spending the morning in the studio of a sculptor of world-wide reputation. They had discussed the perfections of female beauty, and he felt that he was sitting at the feet of a thinker, as well as an "*elegans formarum spectator.*" In the evening they met again at a hospitable palazzo, and, under cover of the waltz, from a quiet corner of observation they saw whirling by in the flesh, much that they had been thinking of in the marble and the clay, and their eyes could not but follow one particular face, famous for the assistance its great natural beauty received from art. "Face," said Dr. Chambers; but the mind of Hiram Powers was penetrating deeper, for he exclaimed after a short silence, "That is all very well, but I want to know where Lady ——— puts her liver!" Where, indeed! for calculating the circumference of the waist by the eye, allowing a minimum thickness for the walls of the chest, an area for the spine, œsophagus and great blood vessels, the section of the waist seemed to admit of no room for anything else. Figure one of the plate, on the following page, represents the natural form of the female human body and the chief organs in their respective places—A, the heart; B, the lungs; C, the liver; D, the stomach; and E, the spleen. The other organs are also represented in their proper places. Figure two, the same bodily form with the organs removed. The other two skeleton figures may be read without text. How, indeed, is it possible to compress the organs represented in the first figure, and bones of the second, into the form of the third and

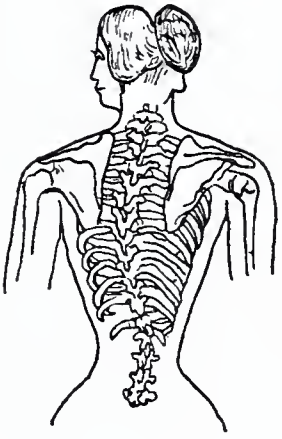
fourth figures, without the results here represented? But the distorted spine and contracted chest are the forerunners only of the concluding scene. Ere these results, the faulty education of laced waistcoats in childhood, has already weakened and attenuated the muscles of the back and chest, and at adolescence the comfort of stays to hold up the weak back has become a necessity. Next a wasp-like waist becomes an object of ambition, and the stays are drawn the tighter as the necessity for supplying the place of the wasting muscles increases, and the spine gives way. Meanwhile, the heart and lungs are compressed and forced upwards. Respiration is impeded, and the blood imperfectly vitalized. The heart is excited, and in proportion as the inspirations become less full, the wants of the system require as a compensation increased frequency; and thus supervenes quickened action of the heart and lungs, creating in them a tendency to inflammation, and fatal disease.

The liver is squeezed down into the abdomen like a big bully elbowing its neighbors out of their places and infringing upon their shapes. Fortunately for itself, it is singularly tolerant of pressure, and submits to being compressed into a variety of forms, only making the more bile for it, and the individual who thus punishes her liver, suffers accordingly. But the poor stomach, unable to resist, it with the spleen is pushed backwards and choked into the folds of the intestines, and all are packed in together upon the organs of the pelvis. Indigestion is a feeble word, and only expresses the first response from this packing process. *Dyspepsia* is more significant. But who can describe the symptoms? That a sense of *sinking* or *fluttering* at the pit—where the stomach ought to be; that a *choking* sensation should be felt, as if a ball were lodged in the œsophagus, dragged down by the weight at the other end; that there should be a sense of fulness and distension in the lower part of the bowels, and that a thousand other symptoms should supervene, referable to the kidneys, bladder, womb, heart, lungs, brain,—indeed to every important organ of the body, for they all have an indissoluble bond of sympathy with the stomach, is surely not surprising.









Poor stomach! It was designed by the Creator to nourish all the organs of the body.

But there are other important organs below the stomach, *all crushed down*. These too were endowed with especial functions, dependent upon the maintenance of their respective relations. Surely there is no reader of these pages so wanting in intelligence as not to comprehend at a glance the effect of this pressure upon the womb and bladder in the bottom of the pelvis. And it is the misfortune of our civilization (!) that the fashion of tight-lacing is so common, that those who practise it are familiar with its tortures. And as if this were not enough, a new style among school girls has recently come into fashion of being harnessed for school. In addition to the tight stays and heavy skirts, a leathern belt, buckled tightly round the waist, and furnished with hooks from which swing the batch of books, school satchel, and umbrella, now constitute the ordinary school equipage. That spinal disease should be on the increase among school girls who follow this fashion, is by no means surprising.

The other two figures of the plate are simply to illustrate the less barbarous fashions of ornamental scarifications of the cheeks and foreheads and the wearing of rings in their noses, in vogue among the young women of Africa and the South Sea Islands; and of flat-heads by a tribe of Indians. Whether these fashions are more or less pleasing to the eye is a matter of taste. They are at least thought to be beautiful by those who practise them, and, possibly they have as many charms for the opposite sex as wasp-like waists and crooked backs.

With us if tattooing the cheeks should ever become fashionable as an improvement on the tortures which at present prevail, the operation might be performed under the influence of chloroform. The Indian fashion of flattening the head is accomplished in childhood when the skull bones are thin and easily shaped; and the process is not probably very painful. Calibre of the skull remains about the same; and intellectuality and the general health of the body are, to say the least, more consistent with the Indian fashion of flattening the head than with tight-lacing.

RESISTANCE TO CHOLERA. — ABSTRACT OF "PRECAUTIONS AGAINST THE INTRODUCTION OF CHOLERA."

By John Simon, *Medical Officer of the Privy Council, London.**

Happily for mankind cholera is so little contagious in the sense in which small-pox and scarlatina are commonly called contagious, that, if reasonable care be taken where it is present, there is scarcely any risk that the disease will spread to persons who nurse and otherwise closely attend upon the sick.

But cholera has a certain peculiar infectiveness of its own, which, *where local conditions assist*, can operate with terrible force, and at considerable distances from the sick.

It is characteristic of cholera, not only of the disease in its developed and alarming form, but equally of the slightest diarrhœa which the epidemic influence can cause, that all matters which the patient discharges from his stomach and bowels are infective, and that, if they be left without disinfection after they are discharged, their infectiveness during some days gradually grows stronger and stronger.

Probably, under ordinary circumstances, the patient has no power of infecting other persons except by means of these discharges ; nor any power of infecting even by them, except in so far as particles of them are enabled to taint the food, water, or air, which people consume. Thus, when a case of cholera is imported into any place, the disease is not likely to spread, unless in proportion as it finds, locally open to it, certain facilities for spreading by *indirect infection*.

In order rightly to appreciate what these facilities must be,

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* Local Government Board, 1871–2. London, pp. 331–3.

the following considerations have to be borne in mind: *First*, that any choleraic discharge cast without previous thorough disinfection into any cesspool or drain, or other depository or conduit of filth, infects the excremental matters with which it there mingles, and probably to some extent the effluvia which those matters evolve; *secondly*, that the infective power of choleraic discharges attaches to whatever bedding, clothing, towels, and like things have been imbued with them, and renders these things (if not thoroughly disinfected), as capable of spreading the disease in places to which they are sent (for washing or other purposes), as, in like circumstances, the cholera patient himself would be; *thirdly*, that if, by leakage or soakage from cesspools or drains, or through reckless casting out of slops and wash-water, any taint (however small) of the infective material gets access to wells or other sources of drinking water, it imparts to enormous volumes of water the power of propagating the disease.

When due regard is had to these possibilities of indirect infection, there will be no difficulty in understanding that even a single case of cholera, perhaps of the slightest degree, and perhaps quite unsuspected in its neighborhood, may, *if local circumstances co-operate*, exert a terrible infective power on considerable masses of population.

It might be supposed that under those provisions of the Sanitary Act, 1866, which relate to precautions against dangerous infections of disease, security would be taken, as regards the infective discharges of cholera, against various kinds of personal conduct which would be dangerous to the public health; above all, that, under those provisions or otherwise, the universal disinfection of such discharges could be enforced. Undoubtedly everything possible in this direction ought to be done, wherever a case of cholera is known to exist; too much importance cannot be attached to the precaution of thoroughly disinfecting, without delay, all discharges from the stomach and bowels of persons suffering under the disease, as well as all bedding, clothing, towels, and the like, which such discharges may have imbued; and, of course, neither choleraic discharges, nor any slops which may

contain traces of them, should ever (even when supposed to be disinfected) be cast into any position from which they may get access into drinking water. The duty of observing those precautions is one which ought never to be neglected; but populations cannot prudently stake their lives on the chance that it will be completely fulfilled for them.

Apart from all question of negligence, the degrees of cholera are too many, and the slight and incipient cases far too apt to escape observation, for any such defence against its infection to be more than partial. *And the main object for endeavor must be to secure such local circumstances, that cholera-contagium, though not disinfected, shall be unable to act extensively on the population.*

The dangers which have to be guarded against as favoring the spread of cholera-contagium are particularly two. *First*, and above all, there is the danger of *water supplies*, which are in any (even the slightest) degree tainted by house refuse or other like kinds of filth; as where there is outflow, leakage, or filtration, from sewers, house-drains, privies, cesspools, foul ditches, or the like, into streams, springs, wells, or reservoirs, from which the supply of water is drawn, or into the soil in which the wells are situate; a danger which may exist on a small scale (but, perhaps, often repeated in the same district), at the pump or dip-well of a private house; or, on a large and even vast scale, in the source of supply of public water-works.

And, secondly, there is the danger of breathing *air* which is foul with effluvia from the same sorts of impurity.

Information as to the high degree in which these two dangers affect the public health in ordinary times, and as to the special importance which attaches to them at times when any diarrhœal infection is likely to be introduced, has now for so many years been before the public, that the improved systems of refuse-removal and water-supply by which the dangers are permanently obviated for large populations, and also the minor structural improvements by which separate households are secured against the dangers, ought long ago to have come into universal use.

So far, however, as this wiser course has not been adopted, temporary security must, as far as practicable, be sought in measures of a palliative kind. (*a.*) Immediate and searching examination of sources of water-supply should be made in all cases where the source is in any degree open to the suspicion of impurity, and the water both from public and private sources should be examined. Where pollution is discovered, everything practicable should be done to prevent the pollution from continuing, or, if this object cannot be attained, to prevent the water from being drunk. (*b.*) Simultaneously, there should be immediate thorough removal of every sort of house refuse and other filth which has accumulated in neglected places; future accumulations of the same sort should be prevented; attention should be given to all defects of house-drains and sinks through which offensive smells are let into houses; thorough washing and lime-washing of uncleanly premises, especially of such as are densely occupied, should be practised again and again. (*c.*) Disinfection should be very freely and very frequently employed in and round about houses, wherever there are receptacles or conduits of filth, wherever there is filth-sodden porous earth, wherever anything else, in or under or about the house, tends to make the atmosphere foul. In the absence of permanent safeguards, no approach to security can be got without incessant cleansings and disinfections, or without extreme and constant vigilance against every possible contamination of drinking water.

In view of any possibility that the infection of cholera may again be present in this country, it is desirable that in each locality the public should ascertain to whom it practically has to look, in case of need, for its collective safety against such dangers as the above. The responsibility is in a large proportion of cases mixed. The most critical of all its branches, the responsibility of providing for the unpollutedness of water supplies.

The responsiblity for local defences against cholera, both as regards water-supply and as regards local cleanliness and refuse removal, is vested in the Local Authorities—the "Sewer Authorities" and "Nuisance Authorities" of recent statutes.

These Authorities—the Town Councils, Improvement Commissioners, Local District Boards, Boards of Guardians, and select and common Vestries (For which we have our substitutes in Boards of Health, Public Works, Police and Common Councils.—*Editor*) of their respective areas of jurisdiction, are all, either electively or directly, so constituted as to represent the will of the local rate-paying population ; and each such population has had almost absolute means of deciding for itself whether the district which it inhabits shall be wholesomely or unwholesomely kept. It is greatly to be wished that the former of these alternatives had, from long ago, been the desire of every local constituency in the country. It may fairly be believed that, in considerable parts of the country, conditions favorable to the spread of cholera are far less abundant than at former times of visitation ; but it is certain that in very many places the conditions of security are wholly or almost wholly absent ; and it is to be hoped that, in all this large class of cases, the Authorities, under present circumstances, will do everything which, in the remaining time, can be done to justify the trust reposed in them by the Legislation for the protection of the public health.

It is important for the public very distinctly to remember that pains taken, and costs incurred, for the purposes to which this memorandum refers, cannot, in any event, be regarded as wasted trouble and expense. The local conditions which would enable cholera, if imported, to spread its infection in this country, are conditions which, day by day, in the absence of cholera, create and spread other diseases—diseases which, as being never absent from the country, are, in the long run, far more destructive than cholera ; and the sanitary improvements which would justify a sense of security against any apprehended importation of cholera would, to their extent, though cholera should never reappear, give amply remunerative results in the prevention of those other diseases.

DISINFECTANTS.—A student, undergoing his examination, was asked what was the action of disinfectants. He replied : "They smell so badly that the people open the windows, and fresh air gets in."

ON SEA-BATHING.

By Abbotts Smith, M. D., M. R. C. P., London, *Senior Physician to the Ear and Throat Infirmary, late Physician to the North London Consumption Hospital, and to the Metropolitan Free Hospital, etc.*

At this season of the year, when hundreds of thousands of persons commence to make preparations for the summer exodus from inland cities and towns to the sea-side—the "great annual wash," as an American humorist has designated this coastward migration—a few observations upon the subject of sea-bathing will not be ill-timed.

From the earliest periods of the history of medicine, physicians have been in the habit of extolling change of air, or of climate, as one of the most powerful natural agencies in the cure of disease. Hippocrates wrote a distinct treatise upon the remedial effects of air, water, and climate, which is not without value, even at the present day; and numerous other Greek and Roman medical authors pointed out the advantages to be derived from change of air, conjoined with bathing.

Those inhabitants of imperial Rome whose means allowed of their doing so, passed some portion of the year at the pleasant health resorts upon the shores of the Mediterranean, in order to renovate their vital powers, impaired by close application to business or study, or by habits of luxury, and a sea voyage was regarded by Celsus and other Roman physicians as a necessary adjunct to other treatment in certain affections.

In more recent times, the practice of visiting the sea-side for purposes of recreation and health, has become almost a fashion. One might parody the words of the poet, and say every year,

> "Thousands bathe now who never bathed before,
> And those who always bathed, now bathe the more;"

for there are few persons, of sufficient means, who do not annually avail themselves of railway facilities to run to the sea-side, if only "to get a dip," and return home by the excursion train, pleased with their "eight hours by the sea," and better prepared for their daily tasks.

At this time of the year materfamilias begins to cast about for some plea for a trip to the coast. Freddy has been growing very fast lately, or Ellen looks pale, and would be benefited by the change, or the people from No. 6 have already gone, or (and in this respect members of the medical profession could give large experience of the pressure which is brought to bias their opinions) Dr. So-and-so has, upon being consulted, declared the positive necessity of giving some of the children—mamma never speaks of herself, poor, self-denying creature—the advantage of sea-bathing; and so paterfamilias yields to his inevitable fate with more or less grace, and, with his family, goes to swell the crowd at Margate, Hastings, Scarborough, or some other place of resort.

There are two large classes of persons for whom such a change of climate as is involved in a visit to the sea-side is especially indicated.

The former, and by far the larger class, consists of those who suffer from no marked disease, but whose health has been tried or weakened by the impure atmosphere of towns, by excessive mental work, close application to business, or some other deteriorating influences; and the second class includes invalids suffering from some definite disease which medicine, alone, has failed to remove, so that the advantages derivable from a pure atmosphere, different to that in which the patient has been living, are requisite before a complete recovery can be obtained.

Fortunately for the health of the community, the facilities for reaching the coast are now so numerous, and at the same time so inexpensive, that it is within the power of many persons to visit the sea-side, and to inhale its fresh, uncontaminated atmosphere with pleasure and benefit.

But there are certain disadvantages which arise out of these increased facilities.

Originally, when the means of communication with the coast were comparatively few, and inaccessible to the masses, those who were able to undertake the journey did not set out upon it without deliberation as to the locality which they should visit, having due regard to the probable effect upon their health, and frequently taking the advice of their medical attendant before coming to a decision.

Now the chief questions which have to be decided previous to making the summer or autumn trip are those of time and personal convenience; so that "Bradshaw" and "A. B. C." are more often consulted than the physician, and any wavering doubt as to the most eligible locality as a health resort is at once dispelled on reading an advertisement in the newspaper that such a place can be reached from London in three hours and a half, while the journey to another would occupy five or six hours.

Of course there are many who, without ever having heard of the name of Celsus, unconsciously use the same expression as that with which he commences his essay on the maintenance of health,* that a man of sound constitution, who is well, and is his own master, ought to bind himself by no rules; but, on the other hand, there are many to whom the choice of a health resort, during their brief annual holiday, is a matter of paramount importance, seeing that upon its judiciousness depend their health, and, to a greater or less extent, the comparative efficiency and comfort with which they will discharge their daily duties in the subsequent twelve months.

Before making a final choice, therefore, it is desirable that due regard should be had to one's existing state of health, the time of the year, the prevalent weather, and the locality and sanitary condition of the different places under consideration.

Having well weighed these points, and started for the coast, the next important question is the selection of a suitable residence during the stay there. In all cases, but particularly if the party comprises invalids or children, it is advisable that

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* Sanus homo, qui et bene valet, et suæ spontis est, nullis obligare se legibus debet. Celsus, Lib. I., Sect. 1.

the lodgings should be within a short distance of, and easy of access to, the beach, so that the full benefit of the marine breezes may be obtained with the least possible degree of fatigue.

Great care should be taken, too, to avoid small, over-crowded lodging-houses. Many people, on resorting to a watering-place, endeavor to quarter themselves in a fashionable part of the town, looking out upon some promenade which at intervals during the day is thronged by others who, like themselves, have come to see (not merely to the sea) and to be seen; and, rather than be disappointed in this respect, they will make shift with ill ventilated, stifling rooms, which they would scorn to use at home. And then, on rising in the morning with a terrible headache, or on finding themselves the prey to various dyspeptic symptoms, they blame the sea air, of which they have really not had a sufficiency, as always producing headache and indigestion in their cases.

It is also desirable to inquire whether the house has been recently occupied by persons suffering from any infectious disorder, and whether the general sanitary arrangements, drainage, &c., are effective.

There are many people who, in a spirit of selfishness, disregard the risk to the health of others involved in their removing invalids recovering from various contagious disorders, to the sea-side before the danger of infection has passed off. Unsuspecting persons, coming subsequently, and taking lodgings at which such cases have been received, are apt to be seized with the affection, as numerous cases too clearly prove.

Only a few years since, one of our principal watering-places was ravaged by a severe epidemic of scarlet fever, which carried off many of the visitors, as well as members of the families of the towns-people, and this epidemic was eventually traced to the importation of the fever into the place by some children, who had been sent there by their parents for change of air, before the period of infectibility had expired.

This is a point which those who let apartments should regard more closely than they generally do; for, although they may get an advanced rent as an inducement to them to receive

such cases, they lay themselves open to subsequent punishment if they neglect the law in this respect, which renders any one who lets rooms in which there have been previously persons suffering from "dangerous infectious disorders," without having had the apartments thoroughly disinfected, liable to a penalty of £20.

The first thing that most visitors think of, as soon as they have settled into lodging, and, in fact, sometimes before that, is bathing.

It is astonishing how much some people contrive to accomplish in this way. An amusing story, illustrative of the injudicious eagerness which is often shown in resorting to sea-bathing, is told of a Leicestershire farmer, who, having been recommended by his medical adviser to have recourse to sea-bathing, and to drink sea-water, went to Skegness, in Lincolnshire, where he bathed eighteen times in three days, and drank during the same short period as many quarts of salt water as it was intended that he should take in a whole month.

Although many of our readers will smile at this anecdote, as an evidence of the extreme to which people will sometimes carry things, it will not be unbeneficial to regulate their own action in the matter of sea-bathing. It not unfrequently happens that persons, often for want of a little exercise of judgment, and prompted by a desire to derive the fullest possible advantage from their temporary marine residence, bathe much more often than they should.

The beneficial effects derived from bathing in the open sea are due to two principal circumstances, namely, the composition of sea-water, and the shock which is occasioned by the action of the waves and the low temperature of the water.

The shock which is thus produced at the surface of the body is speedily communicated to the whole system, and respiration is spasmodically increased by the blood being suddenly diverted from the external parts of the body to the lungs, as well as to the heart and other internal organs. The healthy body possesses, however, a ready power of reaction, the natural result of which is, that the effects which were

primarily produced soon disappear, and the blood returns with increased force to the capillary vessels of the skin, in which the circulation is considerably heightened,—thus giving rise to the agreeable sensation of warmth which is felt by most bathers after an immersion of a few minutes' duration.

The results of judicious sea-bathing in suitable cases are, consequently, the stimulation of the numerous sensitive nerves of the skin, whence the impression is conveyed to the brain and spiral cord, and, subsequently, through the medium of the nervous system, to every organ in the body. We thus get increased circulation, improved nutrition, and a better tone of the system generally; the cutaneous secretion is increased, respiration is more actively carried on, and the liver and other organs are roused into a state of greater efficiency.

But, on the other hand, if bathing in the open sea be employed in unsuitable cases, or too frequently, or if the bather remain for too long a space of time in the water, we find a corresponding series of injurious effects. The body becomes lowered in temperature, the stage of reaction is replaced by one of depression, and, instead of increased activity, there is diminished force of circulation, and various local congestions occur internally, as is evidenced by torpidity of the liver, imperfect digestion, throbbing headache, and similar symptoms.

Bathing in the sea is contra-indicated for old people, for very young children (especially when the first dentition has not been completed), for persons of full habit of body, for those whose circulation is weak and languid, for persons suffering from heart-disease, chronic pulmonary disorders, affections of the brain, or local determinations of blood.

Persons in moderate health will find it best to bathe in the sea every other day only, but those who are of strong constitution and in sound health can bathe daily. The most suitable time for bathing is about an hour or two before a meal, when the food taken at the previous meal will have become partially digested. If, for the sake of convenience, or on account of the time of the tide, persons bathe early in the morning, before breakfast, it is advisable that they should

have some light refreshment—such as a cup of tea, coffee or cocoa, and some bread and butter—before going to take their bath. On no account whatsoever should sea-bathing be resorted to shortly after a heavy meal or strong exercise.

The length of time during which a person should remain in the water necessarily varies according to the age, sex, and constitutional strength of the bather. Due regard should also be had to the state of the weather and season of the year.

In the case of children, five, gradually extended to ten minutes; of women, ten to fifteen minutes; and of men, a quarter of an hour or more, is a fair average period.

There are some people, doubtless, to whom these periods will appear insufficient, and who insist on remaining so long in the water that their skin becomes cold and blue, their teeth begin to chatter, and a condition of general exhaustion comes on; people, in short, who have the "most" for their money, like the countryman who grumbled at having been conveyed thirty miles in about half-an-hour by an express train, on the score that the length of time occupied in the journey was not proportionate to the fare that he had paid. On entering the water, the bather should immerse the whole of the body two or three times, so as to get the action of the shock from the cold water distributed over its entire surface. There should be no hesitancy, no dabbling about with the feet, but a good plunge at once into the next wave that washes in.

Upon coming out of the water the bather should dry the body with good rough towels, dress quickly and take a brisk walk for a short distance. If there be any feeling of exhaustion or nervous depression, a little food or drink should be taken.

Many persons after bathing, complain of noises and unpleasant sensations in the ears, amounting in some instances to temporary deafness. The reason of this is, that it is almost impossible to thoroughly remove the water which has entered the external passage of the ear; so that the remaining moisture evaporates and leads to coolness of the lining membrane

and a diseased secretion of the wax, with occasional inflammation.

Such affections of the ear are excessively frequent, and, according to the statistics furnished by Dr. Kramer, they constitute one-sixth of the total number of cases of aural diseases; inflammation of the lining membrane of the external ear was present in 163 out of 1,000 cases of disorders of the parts of hearing.

I have had under treatment numerous cases of deafness of a confirmed character, in which the origin of the affection could be clearly traced to the practice of bathing, either in sea or fresh water.

The tendency to this ill consequence of sea-bathing can be readily obviated by the simple precaution of placing a small piece of oiled wool in the ears, so as to exclude the water. Bathing-caps, which are sometimes used, do not afford sufficient protection.

It is unnecessary to enter at great length into a detailed list of the diseases in which sea-bathing is followed by happy results.

Foremost we should place scrofula, for, of all the ills which human nature is subjected to, none is more amenable to the natural remedies to be met with at the sea-side than this affection is.

Under the influence of a good, bracing atmosphere, combined with judicious bathing, the constitutional taint is removed, and children who, had they been placed in an impure town atmosphere, would have died prematurely, or have dragged out a miserable life of disease, often grow up healthy and strong after a residence at the coast.

Next to the affections more immediately connected with the scrofulous constitution, such as chronic inflammation and enlargement of the glands, mesenteric disease, rickets, and other kindred disorders, may be ranked nervous debility, consumption, indigestion, affections of the liver, and general weakness, as almost certain to derive benefit from sea-bathing and sea-air.

In cases where bathing in the open sea is inadmissible,

warm sea-water baths are of great value, as also for the purpose of accustoming a patient to the use of bathing; the temperature being, in the latter class of cases, gradually reduced, until open sea-bathing can be safely resorted to.

The proper temperature for a warm bath is from 95° to 100° Fahrenheit, and that for a tepid bath from 75° to 80°.

Douche-baths of sea-water, which consist of a jet of water thrown upon some special part of the body, are very useful as a powerful means of local stimulation in rheumatic and other affections of the joints, etc. But it is essential that this plan of treatment should not be resorted to without previously taking medical advice.

There is one thing which cannot be passed over in a notice, however brief, of the subject of Sea-Bathing. That is Exercise.

For a person to visit the coast with the idea of deriving benefit from sea-bathing simply, would be to neglect certain health-factors which exist nowhere else to greater advantage. He should avail himself of every opportunity for exercise in the open air during fine weather; not omitting an occasional excursion in a sailing-boat, a mode of exercise insufficiently appreciated, if not, indeed, somewhat vaguely feared, by the majority of persons who go to the sea-side.

Those who are unable, by reason of infirmity or illness, to take exercise, will derive much benefit from being placed in the open air and inhaling the marine breezes. The sea-air possesses certain peculiarities which do not exist in an inland atmosphere; and the iodine and bromine which it contains, either in a free state or in chemical combination, the ozone and the saline particles, derived by evaporation from the ocean itself, all assist in communicating to the sea-air health-giving properties of the most valuable character, and conducing in a marked degree to the recovery of invalids who are brought under its genial influence.

—*Public Health*, June, 1873.

THE SOUTH-WESTERN CHOLERA OF 1873.

BY JOHN C. PETERS, M.D., NEW YORK.

This outbreak of Asiatic cholera commenced in New Orleans on Feb. 7th, in the person of a Prussian, æt. 56. The 2d case was reported as fatal cholera morbus, in a Frenchman, in the week ending Feb. 16th. The next 2 cases were in the week ending March 2d, both blacks ; the next 7 cases in the week ending March 9th ; only 2 more cases occurred before the 16th ; only 1 more before the 23d ; and 2 more before the 30th. In the week ending April 6th, the outbreak commenced with 12 cases ; by April 13th, 12 more ; by April 20th, 20 additional ; of which 27 were whites and 30 blacks. By June 22d there had been 141 deaths among the whites, and 103 among the blacks, from cholera and cholera morbus, besides 80 deaths from cholera infantum. In addition, there had been 4 deaths from diarrhœa on Feb. 9th ; and 38 by June 22d ; 57 fatal cases of acute diarrhœa, besides 41 of dysentery.

The first deaths from cholera were among foreigners ; and the deaths among the whites almost always exceeded those among the blacks, showing that the disease was not of indigenous origin. At the meeting of the American Public Health Association, in Cincinnati, on May 1st, Dr. C. B. White, President of the New Orleans Board of Health, stated that a disease closely allied to Asiatic cholera was prevailing sporadically in New Orleans, and by May 20th he officially informed Dr. Clendenin, then Health Officer of Cincinnati, that the disease in question undoubtedly was Asiatic cholera ; and Dr. C. authoritatively announced the fact to the public and Board of Health of Cincinnati. By May 27th rumors became so rife that Cuba established a quarantine against New Orleans vessels ; from official and other quarters information

was sent up to Louisville, Kentucky, that there was a great deal of cholera in New Orleans; and passengers by train and steamer reported the same thing, while the officers of the steamboats denied it.

It was generally admitted and understood that the disease had been imported by some German vessel, or vessels, from the Baltic, for it was well known how cholera had prevailed in Dantzic, Stettin, and Konigsberg, in North-Eastern Prussia. In the latter place alone there had been 300 cases in one week, with deaths amounting to from 50 to 80 per cent. It was also well known that in the previous year an ill-furnished emigrant vessel, which sailed from Stettin for New York, touched at Copenhagen and Christiansand (where cholera now prevails), had an outbreak among the 610 passengers, and finally put into Halifax, into which city she introduced the disease, from whence it was carried to a village 28 miles to the north in November.

The disease was stamped out so quickly and vigorously in New Orleans that these facts did not make much impression upon the public at large, and by July 1st there was really very little cholera in New Orleans. But, as in the great epidemic of 1848 and 1849, which was brought to New Orleans by vessels from Bremen, Hamburg and Havre, the pestilence began to spread by rail and steamboat to various places.

By May 17th it was in Thibodeaux, Lafourche, Raceland and Roekport, Louisiana. At the end of May it was also at Monroe, Louisiana, at a railroad terminus due west of Vicksburg. By May 19th, it was at Vicksburg, and spread due east to Jackson and Canton, Mississippi. Then several railroad laborers came up from New Orleans to work on the new Padueah railroad, 21 miles N. E. of Memphis towards Nashville; 75 Tennessee convicts were sent from Nashville to work on this same road, together with 50 free laborers, near Shelbyville. Cholera broke out so suddenly and severely among this gang, in the first week in May, that the Tennessee convicts were taken back to Nashville, where an outbreak occurred in the Penitentiary. Soon after, some of them, both black and white, were discharged, as I know from personal exami-

nation of the Warden's books, and doubtless found their way into the low cholera haunts about Nashville. I visited the Nashville Penitentiary, conversed with the physician and hospital steward, and with some of the convicts who had seen some 20 of their companions die in from 7 to 10 hours, with diarrhoea, cramps and vomiting; saw them become blue, cold and fatally prostrated. The physician, Dr. Black, who attended these convicts, believed that they died of malaria stirred up in the deep cuts, filled with rotten wood, etc. But, the convicts themselves, some of whom had seen the disease in 1866, were very fearful that it was real cholera. The outbreak of cholera in the Nashville Penitentiary seemed to be controlled by disinfectants liberally used, so that the floor of the prison hospital was caked with them, and by the use of Quinine, both internally and hypodermically.

But to return to Memphis; by May 20th the prevailing epidemic was said to be sweeping over the city; as it came in with the strawberries, it was called the strawberry festival, but by June 5th the funny man ceased his witticisms, and alarm began to be felt; the physicians became generally agreed that it was cholera, some calling it "sporadic," others Asiatic. No Board of Health was constituted until June 16th, when the deaths from cholera were first published, viz., 15; 10 on the 17th; 11 on the 18th; 19 on the 19th; 17 on the 20th; 14 on the 21st, and so on up to June 28th, when there were only 10 to 14 fatal cases per day.

The Memphis Health Board was without money, and could control none. For all statistical and hygienic facts, and for mortuary reports, the public was dependent upon rumor and the sextons. The county squires could hardly be convened while the "indigenous cholera" raged, and the county sexton secured a valueless spot on Wolf's river, just above the Holly water-works, for a new Potter's Field. This place soon stank so foully, that, in Western parlance, the Man in the Moon was seen holding his nose every night to avoid it. The mortality was great; the burials were frequent; rain storms came and swept the light loose earth over the corpses away, and washed it into the stream that furnished drinking water to 70,000

people of Memphis. The waters of life were turned into rivers of death.

Cholera commenced to prevail in Nashville in the latter part of May. On June 3d the city physician published a card that the recent sudden deaths were from cholera morbus, and on June 6th some of the leading physicians publicly disclaimed the presence of real cholera, although there had been a number of serious (so serious as to be quickly fatal), of cholera morbus within the past week. On June 7th the Mayor decreed that it was probable that cholera existed in what might be termed a mild form. By June 10th the disease was pronounced sporadic by some physicians, and Asiatic by others, and quite an exodus took place from the city, every train running full, and extra cars being attached. On June 7th it was officially published that the deaths had not, on any one day, exceeded 7; but it was soon found out that there had been 21. There were 603 fatal cases from June 7th to June 29th, the highest number being 72, on the 20th.

But cholera also reached Nashville in other ways. There is a great through route from New Orleans by way of Mobile, Montgomery, Birmingham, Decatur, and Nashville to Louisville, without change of cars, and I have quite positive proof that two cases from New Orleans were dropped at Nashville, and died in hotels there; the body of one afterwards being sent on to Zanesville, Ohio. A few Germans also came up direct from New Orleans and died of cholera in Nashville; and some negroes from New Orleans, by way of Memphis. In fact, there are scores of ways in which it might have been brought to Nashville, and it did come by three or four of them.

The Nashville theory was, that a long, hard winter had been followed by a very sudden and hot summer; the winter filth was suddenly exposed to a hot sun, and bred a peculiar malaria; that the vegetables were very bad and watery, and disagreed with all who ate them. It was regarded as an indigenous cholera, quite as fatal as the imported; a black cholera, quite as mortal as the blue cholera; an American cholera, quite as malignant as the Asiatic pestilence. The

disease raged mostly along the outskirts and in the low parts of the city, supplied with water from Wilson's spring run, Brown's creek, Lick run and Judge's spring. These foul streams were really open sewers, and the springs arose only 10 or 20 feet from them. The water of the latter, although cool, clean, and fresh, was really only filtered sewage; and the people who drank of them died by scores and hundreds. In the better part of Nashville very few deaths occurred.

From Nashville the disease seemed to spread south to Murfreesboro and Birmingham, Alabama. In the latter place, which is a great railroad centre, the mortality was very great.

It also spread north from Nashville to Gallatin, Woodburn, Franklin, and Bowling Green, which are the nearest and most important railroad stations. At Gallatin the first cases were imported into the National Hotel; at Woodburn, into the Harvey House, by fugitives from Nashville. At Franklin the first case was that of a carpenter from Gallatin, and his physician, Dr. Forline, almost died of cholera, while another, Dr. Southerd, did die of it. At Bowling Green the first three cases were, one from Nashville, another from Memphis, and a third from Evansville. The same general facts held true in Bowling Green, as in Murfreesboro and Nashville; the low grounds, the banks of foul streams, and the drinkers of foul spring water, suffered most. Knoxville, to the west, nearly escaped; but Greenville, on the very border of Virginia, suffered a very heavy loss. The contents of an old public privy had been carted up; heavy rains washed down the filth into the streams and wells, and many deaths from cholera occurred. Louisville has again escaped, but Lagrange, a beautiful town 30 miles further north towards Cincinnati, has been heavily stricken.

In Cincinnati the first cases were brought by the John Kilgour, as early as May 22; the next cases occurred in a boat which lay near it. In the Cincinnati Hospital I found the records of a man, Ab. A. Rohrer, from Janesville, Floyd Co., Kentucky, who came with cattle, staid near the river for a week, and died on May 27th, with vomiting and diarrhœa;

he was blue, cold, and cramped, just like the later hospital cholera cases. But his case was reported as cholera morbus. The Health Officer had no desire to go further back than June 16th for the first case of cholera ; he was technically correct, but scientifically most grievously wrong. As it now is, nearly three weeks of the early history of cholera has been suppressed, either through prejudice, neglect, or obtuseness.

Cholera pursued such a leisurely course in Cincinnati, before and after the 16th of June (the highest number of deaths in one day being 17 only), that if the Health Board had had more power, money, sanitary force, and intelligence, the disease would have been stamped out long ago. As it is, it has slowly progressed, and tenaciously persisted, until Dayton, Columbus, Springfield, and other places have become slightly affected. Cincinnati was, for a long time, the gateway of cholera to the North and East, and it should have been stopped there.

While this was going on, cases were sent from New Orleans and Memphis to Paducah, Evansville, and St. Louis ; and the disease has spread far up the Missouri river ; from Evansville and Mount Vernon to Indianapolis and Chicago.

Our chances in New York will be very good, until cholera is brought over from Europe this fall or next spring ; for a sufficieney of the disease cannot be brought from the West to prevent its being stamped out readily.

The reason cholera has progressed so deliberately is, that the great emigration to the Southern States was broken up during the civil war, and has not been resumed in large proportions. The Mississippi boats now only carry from 70 to 125 passengers, crew and all, whereas they formerly carried from 200 to 500 deck emigrants alone. The disease is brought in such small quantities that good sanitary measures in reasonably clean towns should quickly arrest it.

Editor's Table.

Prof. Henry Hartshorn, in a communication referring to a notice in the last Sanitarian, of his pamphlet on Cholera, to which publication he asserts that we have not done justice, desires to record the following prediction: That, within twenty years, the now common notion that the principal, if not exclusive mode of migration of cholera is, by communication from person to person, through the stools of cholera patients, will come to be remembered only as the obsolete *ism* of a period; and that, within the same time, the detention of well persons at quarantine, under any circumstances, will cease to be tolerated anywhere this side of Constantinople or Alexandria, while, at the same time, the effective preventive control of cholera and yellow fever, so long hoped for by all sanitarians, will be in large degree realized, through measures of *Sanitary Police;* including, under these, ship-inspection and ship-purification, at proper distances from all sea-ports.

That this prediction of Prof. Hartshorn may be appreciated in its true light, the reader is referred to the editorial on Cholera, p. 221, in the last preceding number of the Sanitarian, giving the etiology of cholera as we now apprehend it, and by which standard Professor Hartshorn's views, as expressed in his book, and now reiterated, were measured; and to the papers on cholera, in the present number.

Our views on quarantine, based, as we think, on accepted knowledge of certain zymotic diseases, as one of the means of resisting them, are comprehended in the first number of the Sanitarian, pp. 21 34. Present English Practice of Quarantine in regard to Cholera, Report of Local Government Board, London, 1871–2, pp. 324–30. Other references might be made to the views and practices of numerous authorities, which at present obtain, but the above are deemed to be amply sufficient to emphasize Prof. Hartshorn's challenge.

Massena Springs, St. Lawrence Co., N. Y., *July* 16, 1873.—I presume that many of your readers never have heard of this beautiful spot. The springs are located directly on the verge of the Raquette River, a beautiful stream, which presents, in its sinuous course from its fountain head, the lake of the same name in the centre of the Adirondacks, a series of most charming views, and finally loses itself in the St. Lawrence some ten miles below this point. The fishing in this river is very good. A few days ago a gentleman from your city, while fishing for black bass with rod and fly, almost directly in front of the hotels, struck a Mucalong weighing nearly twenty pounds, which he succeeded in landing after a struggle. In the St. Lawrence, but a short distance from here, pike, pickerel, and black bass are caught in any quantity; and in the Upper Raquette, about thirty miles above ns, the trout fishing is unequalled, and much better this season than on the Lake Champlain side of the wilderness. Of the Spring itself the remedial properties of the waters have been well known, and the place resorted to by a large number of invalids from the surrounding country, as well as from Chicago and

other Western towns, for many years; but it is only within the last five years that they are coming to be known and resorted to by people from New York, Boston, and the East; and now that the hotel accommodations have vastly improved by the erection, at a cost of nearly $60,000, of not only an elegant, but one of the best built and furnished houses of the kind in the country. The house was built by the owner, ex-Alderman Hatfield, formerly of New York, but who has of late years been a resident of East Chester. Those who know this gentleman know that whatever he undertakes to do he does it thoroughly. Of the peculiar qualities of the Massena Spring Waters, I can perhaps convey to your readers a better idea, by quoting from a paper on the subject by one of the leading physicians of this section:

Says Dr. J. H. Grinnell: "As a practitioner of medicine, I regard the medical qualities of the Massena Waters of immense value for the cure of many diseases. The waters have been analyzed, and found to contain a combination of medicinal agents that are of great importance to our profession. The waters have been found very beneficial for the following diseases: Affections of the Kidneys and Liver, Serofula, Chronic Dyspepsia, Diseases of the Skin, Loss of Appetite, General Debility, Chronic Ophthalmia, Calculous Affections, and Chronic Rheumatism. I have seen hundreds of patients afflicted with one or the other of these diseases, who have received great relief, and many who have been completely restored to health by the use of these waters."

The Springs are owned by Mr. John W. Shedden, a druggist of your city, who has the waters bottled here and shipped to all parts of the country. In conclusion, I would mention that we have amusements of every kind and description to help us while away the time at this modern pool of Bethesda, and I think if your patrons who require a change will come up here, with the aid of the waters, pure air, and pleasant company, we can guarantee them perfect restoration of health. * * *

Sanitary Work.—New York, *July* 15.—As a new comer to this country, and having some years ago assisted Dr. W. Hardwicke, Deputy-Coroner and Medical Officer of Health for the District of Paddington, London, in bringing out *The Public Health Journal*, I venture to express my deep gratification at finding you have been bold enough to launch The Sanitarian here. In England, much has been achieved in hygiene, by the untiring energy and co-operation of the medical profession in and out of Parliament, backed up by public opinion, and fortified by a powerful and time-honored medical press. The low death-rate of the three million souls in London speaks volumes in favor of thorough drainage, scrupulous cleanliness, pure drinking-water, and the rigid abatement of nuisances which pollute the atmosphere. The Adulteration of Food Act, which enjoins and empowers parochial vestries and other municipal authorities to appoint public analysts, who are bound to examine into, report upon, and certify the adulteration of any article of human food submitted to them by purchasers, upon payment of a small fee, is another gigantic stride towards that immunity from preventable disease we are all looking forward to, and I perceive that your eminent and able contributors have not been above taking note of the longer experiences and consequent lessons deduced therefrom in the old country.

The SANITARIAN has most praiseworthily devoted many pages to the nursing and healthy rearing of children, and I fervently hope that the labors and suggestions of Dr. J. Walker, and Dr. J. M. Toner, may not be lost sight of, either by the public or the Government. In the face of the terrible infant mortality prevailing here, especially during the hot weather, and in cases where the mothers do not suckle their offspring—for instance in foundling hospitals—it appears to me to be a paramount duty of the State to provide for infants and young children by legislative measures, and by setting the public a wholesome example in its duties towards the tender waifs of humanity, by grants in the direction advocated by your before-mentioned professional and humane contributors. In England, in France, and in Germany, institutions for the daily charge of young children, and known in their respective countries as "Nurseries," "Creches" (cradles), and "Kindergärten," are doing an infinite amount of good for the poorer classes. How much more, then, are similar hygienic helps required, and how much greater would be their beneficent results, in a climate which is tropical during part of the year, and where bountiful nature has as yet many sheltered, cool, and breezy spots, where the little ones could have their daily fill of pure air, as well as pure milk, enabling them not only to live but to thrive and grow strong, instead of, as now, forming an army of innocent martyrs, victims of either utterly degraded or utterly forlorn mothers, upon whom society gloomily, yet inertly, looks on, constituting itself accessory after the fact.

I shall have the honor, sir, to address you again on this subject, as soon as I have been able to complete some personal investigations.—P. J. J. GILES.

DEFECTIVE DRAINAGE, by Dr. Moreau Morris, will be concluded in our next.

AMERICAN PUBLIC HEALTH ASSOCIATION.—The Executive Committee are in doubt about the propriety of holding the adjourned meeting in Providence at the time appointed, for the second Wednesday in September. Most of the members who would like to be present are too much occupied with the maintenance of the public health at home to be absent at that time. It had better be postponed.

THE EPIDEMIOLOGICAL SOCIETY OF MARYLAND.—"BALTIMORE, *July* 20, 1873.—THE SANITARIAN, by unanimous vote, was made the official organ for the publication of our proceedings.

"J. E. P. BOULDEN, M.D., Cor. Secretary."

We are gratified to know that the Epidemiological is a *live* society, doing much for the promotion of sanitary science. We hoped for *proceedings* for July in time for the present issue, but up to time of going to press they have not been received.

THE CHRISTIAN AT WORK.—The Rev. T. DE WITT TALMAGE has accepted the editorship of "The Christian at Work," and his sermons and articles are to be published exclusively in that journal.

OURSELVES.—Particular attention is invited to the advertisement of extraordinary inducements to subscribers.—Advertising Department.

For the Progress of Cholera—See Dr. Peters' paper on the Southwestern cholera, 1873, page 277.

New York.—The great battle has been fought and the victory won by the Board of Health! Not the battle with the markets—that was the *second* battle—but the battle with the purblind municipal authorities.

By daring to do their duty, the Health Authorities have shown themselves to be the masters of the situation, and, by taking the work into their own hands, have at length succeeded in getting beneath the surface of the dirt in the old market-houses, and won the gratitude of the public. No more important work to the health of the community could have been accomplished than the removal of the old market booths, rendering companies, and fat melters. And the *manner of doing it* has inspired public confidence in the strength of the Board of Health to such a degree as to foreshadow at least the longed-for relief to our nuisance-ridden city. But there is no time to be lost. Cholera is still on the march. The uncompromising war now waging against the offal contractor for making a dumping ground of the Bay waxes near its end, and surely some forces could be spared to operate against the death-breeding tenement houses. These have received accessions from the exhumed troglodytes, and are, if possible, seething hotter than ever in filthy slum. In their midst, and at every corner, fruit stands, stale groceries, and groggeries abound. The number of these are on the increase since the destruction of the market booths; and they are loaded, every one of them, with the elements of death—stale, decomposing vegetables, and fruits and whisky, *ad libitum*. The Board of Health is now on the high tide to ultimate success. It should prosecute its work with vigor. These people cannot cleanse themselves. *They do not know how.* They must be taught; but, meanwhile, the cleansing must be done for them. Upon the Board of Health is devolved the duty of permanently eradi-

cating under-ground tenements, the clearing out of slums of every kind, ventilation, the prohibition of unwholesome food and drink, effectual drainage, and the instruction of the people.

BROOKLYN.—Alas! The battle has been fought here, too, and the victory won—but the Board of Health is defeated. *It* and all of its plenary powers have succumbed to the general direction of the Board of Aldermen, and *it* is subordinate to the Board of Public Works, which is amenable to nobody but themselves. The swine, which by *resolution* were excluded from the city limits six weeks ago, are still here, doing good service as scavengers; for about the same time that the swine were excluded, the dumping of house garbage with ashes, in sunken lots, was prohibited in the same manner; hence the swine are very useful under the circumstances. They devour part of the garbage that would otherwise be eking out its poison years hence on the occupants of the ground thus filled in. It now appears that the passage of these resolutions was *without first consulting the Board of City Works!* This Board had already arranged with the alderman of each ward of the city, respectively, that the alderman of the ward should have the general directing of garbage dumping within his precinct; and, sustained by the Board of Works, the alderman permits his contractor to defy the Board of Health, no matter who he kills. The present phase of action on the part of the Board of Health consists in having sanitary inspectors and detectives, stationed by the sunken lots, taking account of the garbage dumping under the direction of the Aldermen, with a view to trial by the courts after the summer vacation!

The fever bank of decayed grain is still, in great part, unremoved; and the neglectful contractors for the removal of street dirt in the neighborhood of it are permitted to use it as a scape-goat; the culverts and gutters are choked with filth-reeking grain stench! Cow stables are still tolerated within the city limits, some of them in thickly populated neighborhoods; old privy vaults unemptied, and numerous other accumulations of filth throughout the city, requiring, apparently,

for their removal, the approbation of the Board of City Works, who, at last accounts, were in the Adirondack wilderness.

CHICAGO.—Deaths from all causes during the week ending July 19, 423; of these 205 were of diarrhœal diseases. For the week previous, 317; 127.

INDIANAPOLIS.—Deaths from all causes during the month of July, 152; from cholera, 7; cholera morbus, 4; cholera infantum, 42.

DAYTON.—Deaths from all causes during the month of July, 97; from cholera, 7; cholera morbus, 2; cholera infantum, 24.

WHEELING.—Deaths from all causes during the month of July, 43; from cholera, 3; cholera morbus, 3; cholera infantum, 7. Up to August 5, whole number of cases of cholera reported, 7; none for the last 11 days.

Book notices unavoidably crowded out.

BOOKS RECEIVED.

Foods. By EDWARD SMITH, M. D., LL.B., F. R. S. New York: D. Appleton & Co.

The Prevention and Cure of Disease. A practical treatise on the nursing and home treatment of the sick. By GEO. H. NAPHEYS, A.M., M.D. Springfield: W. J. Holland & Co.

Ozone and Antozone. Their History and Nature. By COMELIUS B. FOX, M. D., Edin. London: J. & A. Churchill.

Adventures in the Wilderness of the Adirondacks. By MURAY. Boston: Jas. R. Osgood & Co.

Tour of the World in 80 days. By JULES VERNE. Boston: Jas. R. Osgood & Co.

Superstition and Force. By H. C. LEA. Philadelphia: Henry C. Lea.

Wohler's Organic Chemistry. Philadelphia: Henry C. Lea.

Digestion and Dyspepsia. TRALL. New York: S. R. Wells.

Notes on Asiatic Cholera. By J. C. PETERS. New York: D. Van Nostrand.

And various Reports, Brochures, and Exchanges, in our next.

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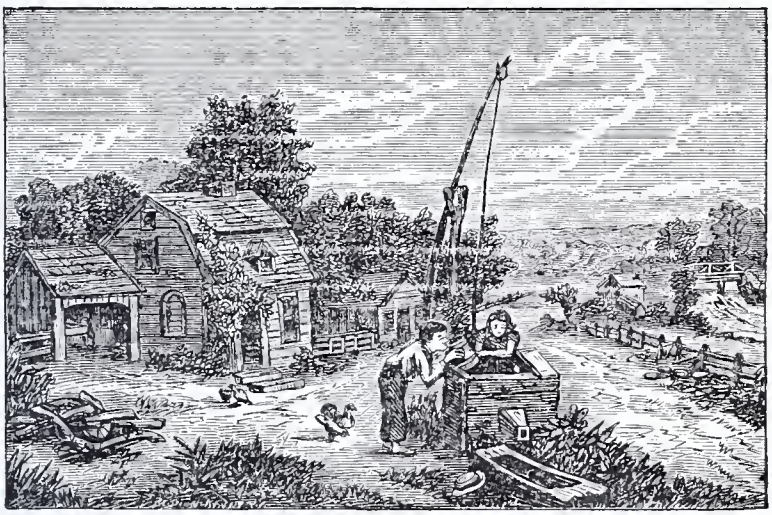

The wide-spreading pond, and the mill which stood by it,
The bridge, and the rock where the cataract fell,
The cot of my father, the dairy-house nigh it,
The old oaken bucket—the iron-bound bucket—
The moss-cover'd bucket, which hung in the well.

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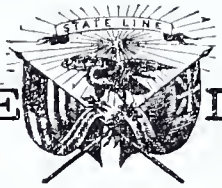

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WYOMING, Capt. MORGAN.....Sept. 24, at 8 A. M.

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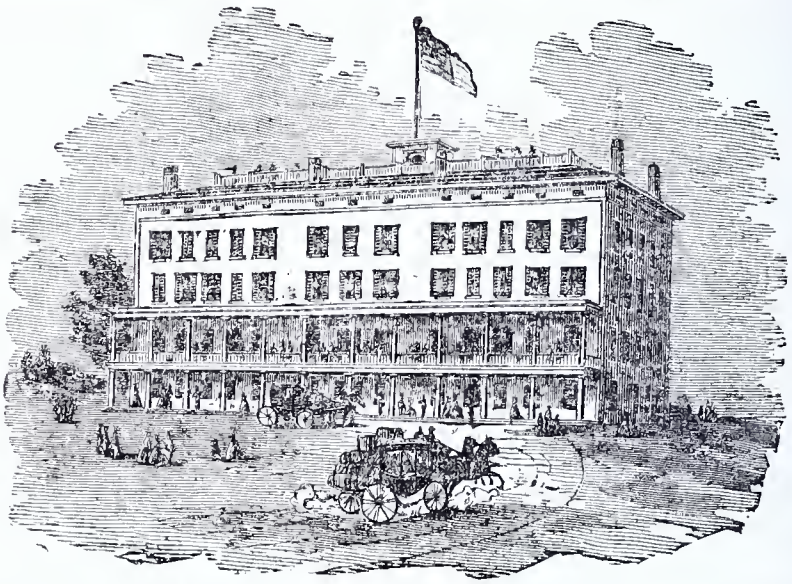

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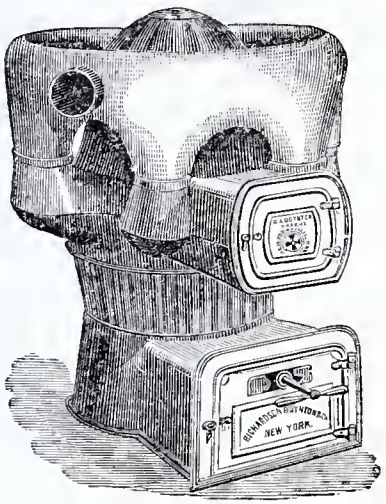

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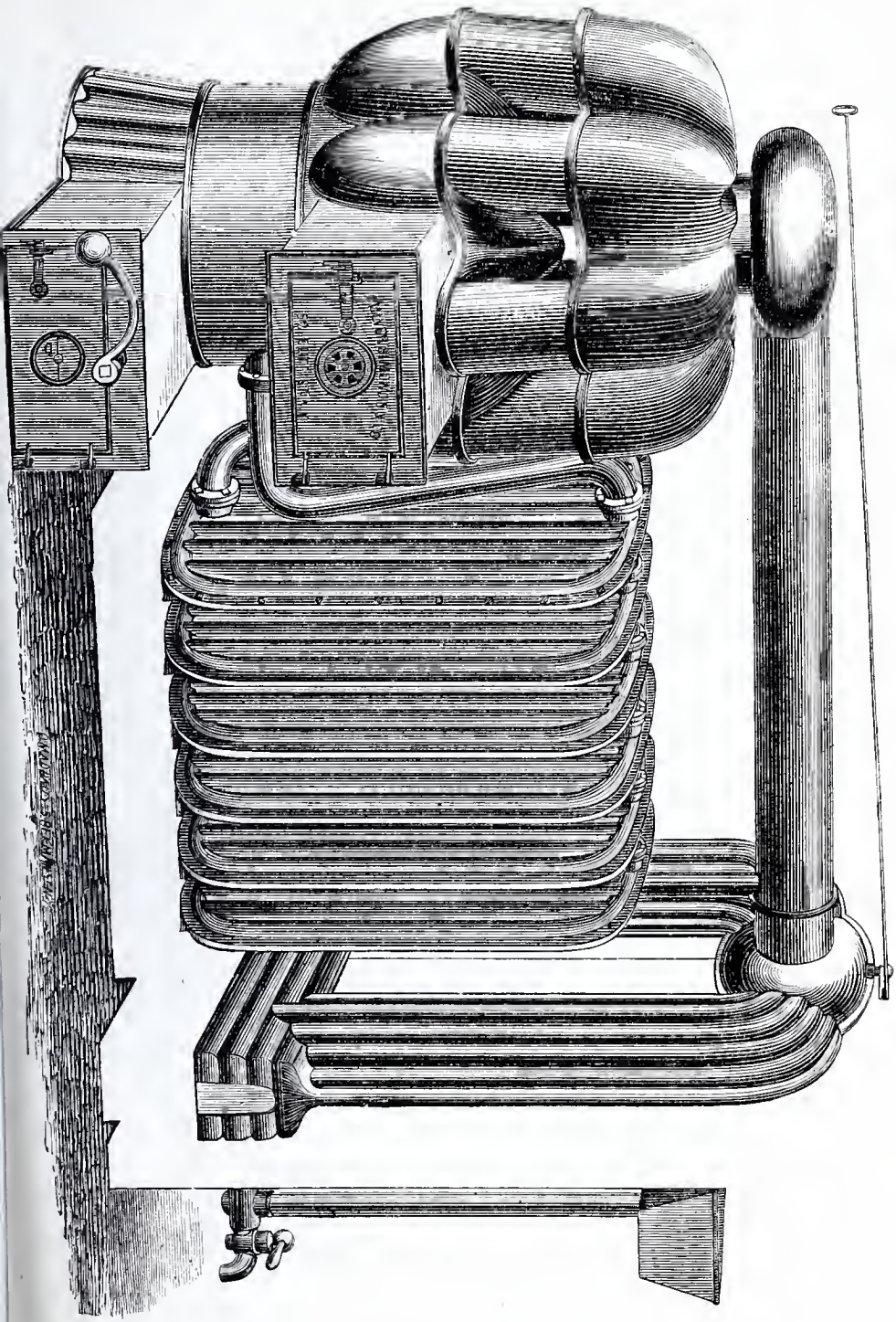

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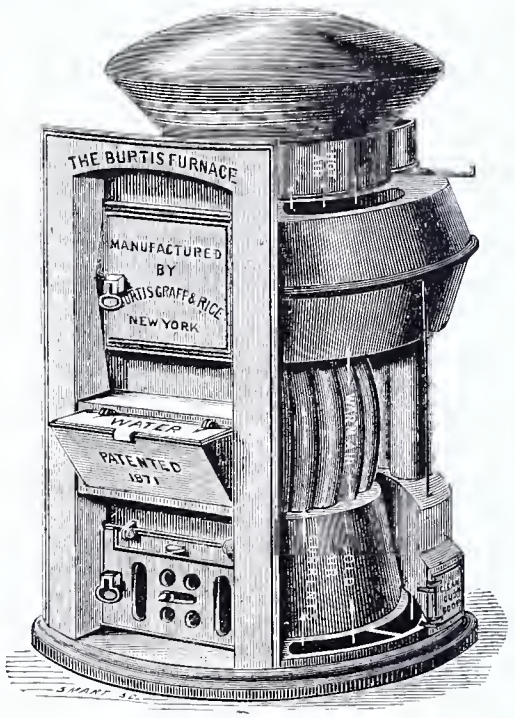

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AUSTIN FLINT, M. D.,

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Demonstrator's Ticket (including material for dissection,	10 00
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